Conclusion

Science has been described by Medawar as the Art of the Soluble. Maybe as the fundamental theories of Physics are not, for many applications, exactly soluble, Science can be described as the art of Modelling, in the sense we have been discussing. The models attempt to capture the essential structural features of some Physical Situation.

Since at least the time of Galileo Science has proceeded by the method of accidents, the conceptual complexity of the real world. The complexity is dealt with by producing, by good or increasingly 'realistic' models.

One can speculate whether modern Science could have got started at all if the first problem to be studied had been a really hairy branch of Physics, such as Nuclear Physics, rather than the Mechanics of the Solar System, where the method of successive approximation (the so-called perturbation theory) is happily applicable.

Marie Cartwright in her recent book 'How the Laws of Physics Lie', has ventured whether Science has any use at all for deep unifying Laws, that Science just is the collection of partial and incomplete descriptions provided by an army of models.

That goes too far: there are a few simple whole phenomena where

Physics can calculate just just
Prerequ. the tests of the Lords
that is the anomalous magnetic
moment of the electron or a BP.
But in more complicated applications
the situation is not that we know
that the laws of Physics be ~~wrong~~
the weakest thread be ~~the old~~
Scottish use of Not-Pro rather we
should resort to the old Scottish
verdict of Not-proven. We just do
not know what to fundamental theories
predict, so the taught link between
those theories and experiment, prompted by Occam's
philosophy of science, is, in many instances
an illusion.